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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/802,551	03/09/2001	Clive M. Philbrick	ALA-012	8657

24501 7590 02/25/2005

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EXAMINER

PEREZ DAPLE, AARON C

ART UNIT PAPER NUMBER

2154

DATE MAILED: 02/25/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/802,551

Applicant(s)

PHILBRICK ET AL.

Examiner

Aaron C Perez-Daple

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 03 December 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-18,21 and 22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-18,21 and 22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 12/3/04.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

### DETAILED ACTION

1. This Action is in response to Amendment filed 12/3/04, which has been fully considered.
2. Amended claims 1-18 and new claims 21 and 22 are presented for examination.
3. Claims 19 and 20 are cancelled by Applicant.
4. This Action is FINAL.

### *Claim Rejections - 35 USC § 103*

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. **Claims 1, 3-18 and 21** are rejected under 35 U.S.C. 103(a) as being unpatentable over Wang et al. (US 5,913,028) (hereinafter Wang) in view of Stevens ("TCP/IP Illustrated, Volume 1: The protocols," New York, 1994.) and further in view of Schulzrinne et al. (RFC 1889, <http://www.ietf.org/rfc/rfc1889.txt?number=1889>, January 1996) (hereinafter Schulzrinne).
7. As for claims 1 and 21, Wang discloses an apparatus for transferring information between a network and a storage device, the apparatus comprising:  
  
a host computer having a CPU (CPU 24, Fig. 2) operating a file system (file system 27, direct file system 28, and peer I/O manager 26, Fig. 3) and a host memory (memory 32, Fig. 2) connected to said CPU by a host bus (Figs. 2 and 3), and

an interface device coupled to said host computer, to the network and to the storage device, said interface device including an interface memory containing an interface file cache (local memory 44, Fig. 3) adapted to store data that is communicated between the network and the storage device under control of said file system (Network I/O Device, Fig. 3; col. 3, lines 31-52; col. 4, line 50 – col. 5, line 5),

wherein said host computer is configured to designate *a socket* that is accessible by said interface device, and said interface device is configured to communicate said data between the network and the file cache according to said *socket* (Note, a socket is merely a destination address and port, which is required for data transfer on a network. See cited definition from techdictionary.com.; col. 4, line 38 – col. 5, line 5; Fig. 3).

Although obvious to one of ordinary skill in the art at the time of the invention, Wang does not explicitly teach that the socket may be User Datagram Protocol (UDP) socket. The Examiner notes that UDP is a well-known protocol for data transfer on networks, as shown by Stevens, Chapter 11, for example. Schulzrinne further teaches the use of UDP as an underlying protocol for RTP in order to maintain the real-time characteristics of data such as audio and video (section 1, Introduction). As understood by one of ordinary skill in the art at the time of the invention, when UDP is used, UDP sockets are inherently required in order to receive the information packets over the network (see cited definition from techdictionary.com). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Wang by using UDP sockets in order to maintain the real-time characteristics of data such as audio and video, as taught by Schulzrinne above.

8. As for claim 3, Wang does not explicitly disclose the use of Realtime Transport Protocol (RTP) headers. Schulzrinne teaches creating RTP headers and prepending the header to the data for transmission over the network (Sections 5, 5.1, 10). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Wang by creating RTP headers and prepending the header to data in order to maintain the real-time characteristics of data such as audio and video, as taught by Schulzrinne above.
9. As for claims 4, 5 and 6, Wang does not explicitly disclose the use of UDP headers. Stevens teaches that UDP, by definition, prepends data with UDP headers, wherein the data is further divided into plural fragments which are concatenated corresponding to the UDP header (Sections 11.2 and 11.5). It would have been obvious to one of ordinary skill in the art to modify Wang by using UDP headers and dividing the data into plural fragments, in order to efficiently transfer data over a network, as taught by Stevens above.
10. As for claim 7, Wang teaches the apparatus of claim 1, wherein said data does not enter said host computer (col. 3, lines 31-52; Fig. 3).
11. As for claims 8 and 9, Wang does not explicitly teach that the data may comprise audio and video data. Schulzrinne teaches the transfer of audio and video data over a network (Section 1, Introduction). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Wang by transferring audio and video data in order to make this data accessible over a network.
12. As for claim 10, Wang teaches the apparatus of claim 1, wherein said data is a part of a realtime communication (col. 3, lines 31-52).

13. As for claim 11, Wang discloses an apparatus for transferring information between a network and a peripheral device, the apparatus comprising:

a host computer having a processor(CPU 24, Fig. 2) connected to a host memory (memory 32, Fig. 2) by a host memory bus (connection illustrated in Fig. 2), said host memory containing an application operable by the processor to designate *a socket* (Note, a socket is merely a destination address and port, which is required for data transfer on a network. See cited definition from techdictionary.com.; col. 4, line 38 – col. 5, line 5; Fig. 3), and

an interface device (network I/O device 40, Fig. 2) connected to said host computer and coupled between the network and the peripheral device, said interface device including an interface memory adapted to store data corresponding to *said socket* and a mechanism configured to associate said data with *a header* corresponding to *said socket* such that said data is communicated between the network and the peripheral device without encountering said host computer (col. 4, line 38 – col. 5, line 5; Fig. 3).

Although obvious to one of ordinary skill in the art at the time of the invention, Wang does not explicitly teach that the socket and header may be a User Datagram Protocol (UDP) socket and header. The Examiner notes that UDP is a well-known protocol for data transfer on networks, as taught by Stevens, Chapter 11, for example. Schulzrinne further teaches the use of UDP as an underlying protocol for RTP in order to maintain the real-time characteristics of data such as audio and video (section 1, Introduction). As understood by one of ordinary skill in the art at the time of the invention, when UDP is used, UDP sockets are inherently required in order to receive the information packets over the network (see cited

definition from techdictionary.com). Similarly, UDP headers are inherently required for addressing each of the packets (see Stevens, section 11.2). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Wang by using UDP sockets and headers in order to maintain the real-time characteristics of data such as audio and video, as taught by Schulzrinne above.

14. As for claim 12, Wang discloses the apparatus of claim 11, wherein said host computer contains a file system (file system 27, Fig. 3) and said interface memory includes a file cache (local memory, 44, Fig. 3) adapted to store said data, wherein said file system manages storage of said data in said file cache (col. 4, line 38 – col. 5, line 5; Fig. 3).
15. As for claims 13 and 14, Wang does not explicitly disclose the use of UDP packets and headers. Stevens teaches that UDP, by definition, includes UDP packets and headers, wherein said data travels over the network in plural fragments (packets) corresponding to the header. The interface device is further required to process the UDP headers and concatenate the data. See Stevens, Chapter 11, especially Sections 11.2 and 11.5. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Wang by using UDP packets and headers, wherein the interface device processes the headers and concatenates the data, because these are well-known and necessary steps in order to efficiently transfer data over a network, as taught by Stevens above.
16. As for claim 15, Wang does not specifically disclose the use of Realtime Transport Protocol (RTP). Schulzrinne teaches the use of RTP and RTP headers in order to transfer data over a network while maintaining the real-time characteristics (Section 1, Introduction; Section 5.1, RTP Fixed Header Fields). It would have been obvious to one of ordinary skill

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in the art at the time of the invention to modify Wang by using RTP and RTP headers in order to transfer data over a network while maintaining the real-time characteristics, as taught by Schulzrinne above.

17. As for claims 16 and 17, Wang does not explicitly teach that the data may comprise audio and video data. Schulzrinne teaches the transfer of audio and video data over a network (Section 1, Introduction). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Wang by transferring audio and video data in order to make this data accessible over a network.
18. As for claim 18, Wang teaches the apparatus of claim 11, wherein said data is a part of a realtime communication over the network (col. 3, lines 31-52).
19. **Claims 2 and 22** are rejected under 35 U.S.C. 103(a) as being unpatentable over Wang in view of Stevens and Schulzrinne and further in view of Applicant's admitted prior art (pg. 31, line 28 – pg. 32, line 8) (hereinafter AAPA).

As for claims 2 and 22, Wang explicitly teaches the use of application layer headers, which inherently includes prepending these headers to the data (col. 11, lines 14-36), because otherwise the data packets could not be transferred. It is not clear from Wang whether or not these application layer headers are created by the host computer or the interface device. Thus, Wang, Stevens, and Schulzrinne do not specifically disclose that the host computer is configured to create the application layer header that is accessible by said interface device. However, AAPA (pg. 31, line 28 – pg. 32, line 8) teaches that it is conventionally known to generate an application packet header at a host computer. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings



of Wang and Schulzrinne by configuring the host computer to create an application layer header that is accessible by said interface device in order to transmit application data over the network. Moreover, it would have been obvious to generate the application headers at the host computer of Wang, because the application resides on the host computer and this would simplify data processing.

### *Response to Arguments*

#### **112 Claim Rejections**

20. The rejection of claims 7 and 11-18 under 35 U.S.C. 112, second paragraph, is hereby withdrawn. In particular, the Examiner finds that the claims are not indefinite when taken in context of the specification (for example, Fig. 1 clearly illustrates a host computer 20).

#### **Double Patenting**

21. The obvious-type double patenting rejection of claims 1-18 is hereby withdrawn after further consideration and in view of Applicant's Remarks on pgs. 12-13.

#### **103 Claim Rejections**

22. Applicant's arguments filed 12/3/04 have been fully considered but they are not persuasive.

On pages 15-17 of the Remarks, Applicant asserts that Wang fails to teach an "interface file cache." The Examiner respectfully disagrees. First, the Examiner notes that the term "interface file cache" does not have a standard meaning in the art. Applicant has further not explicitly defined the term in the specification. Therefore, any cache (i.e. temporary

memory) performing the functions claimed is sufficient to anticipate an “interface file cache.” As noted in the cited definition from techdictionary.com, a cache is “a temporary memory area for frequently-accessed or recently-accessed data.” The local memory 44, Fig. 3 (also local data buffers 44, Fig. 5) of Wang provides just such temporary storage for files transferred on the network. As explicitly noted in col. 4, lines 55-58, of Wang:

The storage I/O device reads data into its local memory and then moves the data directly into buffers on the network I/O device.

See also col. 5, line 56 – col. 6, line 7. With reference to the passages cited by Applicant, the Examiner finds that the “peer I/O manager” of Wang is part of the overall “file system” (see col. 11, lines 24-36). Thus, Wang also anticipates the limitation that the transfer occurs “under control of said file system.” Therefore, the Examiner properly interprets that the local memory 44 of Fig. 3 is an “interface file cache.”

On pages 17 and 18 of the Remarks, Applicant further asserts that the Examiner has failed to provide proper motivation for the combination of the references because “there is no existing protocol standard that implements UDP over IPX.” The Examiner respectfully disagrees. First, the Examiner finds that the real issue at hand is not whether or not there exists a protocol standard that implements UDP over IPX. The question is what would be suggested as a whole to one of ordinary skill in the art by taking the combined teachings of the references. The Examiner concedes that Wang uses the IPX network protocol. However, the TCP/IP protocols are commonly known to those of ordinary skill in the art; and, it is also well-known that one protocol may be substituted for another depending on the particular application or network requirements. As noted in RFC 1889, UDP has the advantage of being an underlying protocol for RTP, which provides for the real-time

transmission of audio and video data. Thus, it would have been obvious to one of ordinary skill in the art to modify Wang by using IP network protocols instead of IPX, if necessary.

Moreover, the Examiner finds that RFC 1791 would have been sufficient to teach the implementation of UDP over IPX to one of ordinary skill in the art, since this was specifically contemplated and detailed in the RFC which dates back to 1995. Applicant's statements that this would be too "risky" for one of ordinary skill in the art are merely conjecture without any factual basis. Thus, whether or not Wang was modified to use an IP network protocol, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Wang by using UDP.

On page 19 of the Remarks, Applicant points out that UDP is actually a connectionless protocol. The Examiner concedes this point. However, as noted in techdictionary.com, a socket is merely a destination address and port for exchanging data between computers. Therefore, UDP sockets are still inherently required in order to transmit data over the network. Indeed, Applicant's own claimed invention would not make sense if this were not the case (e.g. how could you claim UDP sockets if they did not exist?).

Applicant's arguments regarding claims 11 and 12, found on pages 21-24 of the Remarks, are not persuasive for the same reasons cited above with respect to claim 1. In addition, on page 22, Applicant asserts that the references do not teach and that the Office Action does not allege to teach, "an interface device...including...a mechanism configured to associate said data with a User Datagram Protocol header corresponding to said User Datagram Protocol socket such that said data is communicated between the network and the peripheral device without encountering said host computer." The Examiner respectfully

disagrees. First of all, the previous Office Action clearly detailed that Wang teaches each limitation of the claim except for the use of UDP. Specifically, just such an interface device is clearly illustrated in Fig. 3 (network I/O device) and Fig. 5. Moreover, it is clear that the data transfer occurs directly between the storage device and the interface device *without encountering said host computer* (see col. 4, lines 55-57). The motivation for using UDP packets and headers (which inherently also includes UDP sockets) is provided by Schulzrinne, as further detailed in the previous Action and clarified above.

Regarding claims 3-6 and 13-15, Applicant makes various arguments on pages 19-20 and 24-25 of the Remarks, asserting that the references do not teach creating RTP headers, prepending the headers to the data, processing the UDP headers, or concatenating the data fragments (packets). To the contrary, the Examiner finds that all of these features are inherent to the use of RTP and UDP and, in fact, *explicitly taught* by Schulzrinne in the sections cited in the previous Office Action and repeated in the rejection above. In summary, RTP and UDP *require* the use of headers which are prepended to the packetized data. As understood by one of ordinary skill in the art, protocol stacks (see definition from techdictionary.com) located in the respective network interfaces process the headers in order to packetize (sending side) and concatenate (receiving side) the data packets. Once modified to use RTP/UDP, as motivated by Schulzrinne, the interface device of Wang would *necessarily* comprise just such a protocol stack for performing these functions.

With respect to claims 13-15, Applicant requests that the Examiner point out where Schulzrinne teaches an “interface device.” First, Schulzrinne is not required to explicitly teach using an interface device, because Wang teaches the use of an “interface device”

(network I/O device, Fig. 3). Second, even if Wang did not teach this feature, the use of an interface device is *inherent* to any system embodying the teachings of Schulzrinne for sending and receiving packets over a network, as would have been obvious to one of ordinary skill in the art. It is not possible to send and receive data packets on a network unless there are at least two interfaces devices for performing the respective sending and receiving.

For all of these reasons, claims 3-6 and 24-25 are properly rejected as obvious over Wang in view of Schulzrinne.

Applicant's arguments with respect to claim 2 are found on pages 26-27 of the Remarks. The grounds for the rejection have been clarified above and are further reiterated here. The Examiner finds that Wang explicitly teaches the use of application layer headers, which inherently includes prepending these headers to the data (col. 11, lines 14-36), because otherwise the data packets could not be transferred. It is not clear from Wang whether or not these application layer headers are created by the host computer or the interface device. AAPA (pg. 31, line 28 – pg. 32, line 8) teaches that it is conventionally known to generate an application packet header at a host computer. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Wang and Schulzrinne by configuring the host computer to create an application layer header that is accessible by said interface device in order to transmit data about the application over the network. Moreover, it would have been obvious to generate the application headers at the host computer of Wang, because the application resides on the host computer and this would simplify data processing.

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For all of these reasons, claims 1-18, 20 and 21 are properly rejected under 35 U.S.C.

103(a).

***Conclusion***

23. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

Search results for "protocol stack," "cache," and "User Datagram Protocol" from techdictionary.com, visited 2/17/05;

Sung, RFC 1791, <http://www.ietf.org/rfc/rfc1791.txt?number=1791>, April 1995.

24. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

25. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aaron C Perez-Daple whose telephone number is (571) 272-3974. The examiner can normally be reached on 9am-5pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Follansbee can be reached on (571) 272-3964. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

 2/18/05  
Aaron Perez-Daple

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